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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Hitoshi Hirakawa

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EXAMINER

SHERMAN, STEPHEN G

ART UNIT

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/661,535	Applicant(s) HIRAKAWA ET AL.	
	Examiner STEPHEN G. SHERMAN	Art Unit 2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 May 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 20 and 23-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 20 and 23-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 June 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 5 May 2008 has been entered. Claims 1, 20 and 23-26 are pending.

Response to Arguments

2. Applicant's arguments filed on 5 May 2008 with respect to the 112, first paragraph rejection of claims 1, 20, 23 and 24 have been fully considered but they are not persuasive.

On page 6 of the response the applicant argues the amendments to claims 1 and 20 overcome the 112, 1st paragraph rejection because there is support in the original specification at page 9, lines 14-24 and in Figures 8 and 9. The examiner respectfully disagrees. Although the examiner acknowledges that the specification at the part cited by the applicant states "predetermined subfield", which broadly encompasses all subfields, however, the applicant is specifically claiming the embodiment of Figures 8

and 9, which do not support the "subsequent" language of the claims since the specification clearly states on page 17, lines 11-12 that all of the cells to be written are lit in SF2. Thus all cells to be written are not lit in SF3, SF4, etc, but rather only SF2 as explained in the rejection below.

3. Applicant's arguments with respect to the art rejections of claims 1, 20, 23 and 24 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 1, 20, 23 and 24 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claims 1 and 20 each state the limitation "addressing, in at least one subfield including and subsequent to the second subfield". There is insufficient description in the specification to support this claim. The part of the specification discussing the embodiment claimed begins on page 16, line 15 and continues to page 17, line 21,

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where page 17, lines 11-12 explicitly state that all of the cells to be lit in a display field have been lit in SF2. Thus all of the cells to be written are not written in at least one subfield subsequent to the second subfield. Therefore, this limitation cannot be included in the claims because there is not enough description in the specification to support this feature so as to convey to "one of ordinary skill" in the art at the time the invention was made that the inventor has possession of the claimed invention.

For the purposes of examination, the examiner will ignore the "subsequent" limitation that is not supported by the specification, and read the limitation as "addressing, in at least one subfield including the second subfield".

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claim 25 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 25 recites the limitation "applying a scan pulse to the second electrodes and an address pulse to the third electrodes in order to write all of the cells to be lit in any of the subfields subsequent to the first subfield in the display field in the address period". The limitation is indefinite because it is unclear as to whether the applicant intends to claim that the scan pulse is applied in any of the subfields subsequent to the first subfield, thus making a 112, 1st paragraph issue similar to claims 1 and 20, or

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whether the applicant has intended to claim that the scan pulse is applied so that all cells that will be written in any of the subfields will be written all at once in one subfield.

For the purposes of examination the examiner will assume the latter, as read the limitation as all of the cells to be written at any time during the field will be written in a first/second subfield as supported by the specification.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

10. Claims 1, 20, 23 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Correa et al. (EP 1,174,850 A1) in view of Sano et al. (US 6,115,011) and further in view of Ishizuka (US 2002/0050794).

Regarding claim 1, Correa et al. disclose a method for driving a plasma display panel, wherein a display field comprises a plurality of successive subfields having at least two different luminance weights, producing a gradation display, each display subfield comprises at least an address period to write cells to be lit in the display subfield in accordance with corresponding display data and a sustain period to cause light emission to occur in the written cells (Paragraph [0021]), said method comprising:

writing an all-write discharge in a first subfield having a lightest luminance weight (Paragraph [0012] and Paragraph [0022] explain that a priming pulse causes a discharge where all-cells are illuminated. Figures 1-3 show that priming pulses are applied at the beginning of the first subfield.),

addressing, in at least one subfield including and subsequent to the second subfield, and substantially near a head of the display field, all of the cells to be written in the respective address periods of the plurality of successive display subfields in the display field (Paragraphs [0025]-[0029] explain that the first subfield is used to write all of the cells that are not to be black, i.e. all cells to be written in the display field. The chart at the top of column 6 illustrates this point, since there is a 0 in the first subfield for display data "0" and a 1 in the first subfield for all other display data levels. Paragraph [0046] explains that Figure 2 shows an example where the first two subfields are SPSF, where paragraph [0025] explains that a SPSF is one in which all cells, that should not be black, are excited. Thus the first and second subfield is a SPSF and all of the cells to be written are written in any subfield including the second subfield.); and

applying sustain pulses to cause light emission in the respective sustain periods of the successive display subfields of the display field (Paragraph [0021] explains that subfields contain a sustain period to cause light emission.).

Correa et al. fail to teach of writing an all-cell write discharge in a second subfield having a second lightest luminance weight.

Sano et al. disclose a method for driving a plasma display panel, comprising generating an all-cell write discharge in a priming period of every subfield (Figure 4 shows that there is a priming period in every single subfield.).

Therefore, it would have been obvious to “one of ordinary skill” in the art at the time the invention was made to provide for priming period in every subfield as taught by Sano et al. in the method taught by Correa et al. such that the first and second subfields of the lightest weights would contain priming periods in order to use the priming discharging in an advantageous way so as to initialize all of the cells before writing.

Correa et al. and Sano et al. fail to teach writing in said at least one subfield, after said addressing, an inclined waveform suppress an accumulation of a wall charge in unselected cells.

Ishizuka discloses a method for driving a plasma display panel comprising writing in one subfield, after addressing, an inclined waveform suppress an accumulation of a wall charge in unselected cells (Figure 12 shows that Period 6 is after addressing and contains an inclined waveform applied to the scanning electrode. See paragraphs [0058]-[0060]).

Therefore, it would have been obvious to “one of ordinary skill” in the art at the time the invention was made to provide for the inclined waveform period taught by Ishizuka to be placed between the scanning and sustaining periods taught by the combination of Correa et al. and Sano et al. in order to suppress an accumulation of a wall charge in unselected cells.

Regarding claim 20, please refer to the rejection of claim 1, and furthermore Correa et al. also disclose a plasma display device comprising a plasma display panel and a driving circuit for the plasma display panel (Figure 4).

Regarding claims 23 and 24, Correa et al., Sano et al. and Ishizuka disclose the method for driving a plasma display panel as set forth in claim 1 and the plasma display panel as set forth in claim 20.

Correa et al. also disclose wherein a third subfield subsequent to the second subfield and a subfield after the third subfield each have a charge control period due to a charge control pulse different from the all-cell write discharge (Figure 2 shows that the third subfield is a RSF, where paragraph [0033] explain that writing pulses, i.e. charge control pulses, are used to control the charge in the cell, i.e. neutral or excited states.).

11. Claims 25 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Correa et al. (EP 1,174,850 A1) in view of Sano et al. (US 6,115,011) and further in view of Ishizuka (US 2002/0050794) and Yoon et al. (US 7,286,102).

Regarding claim 25, please refer to the rejection of claim 1, and furthermore Ishizuka et al. also disclose a plurality of first and second electrodes (Figure 1, 104 and 103) and a plurality of third electrode (Figure 1, 107) disposed to cross the first and second electrode (Figure 1), wherein the method comprises:

applying, to the second electrodes, in an initial first subfield in the display field having a lightest illuminance weight and a reset period, a first-waveform voltage in which the applied voltage increases as time elapses (Figure 12 shows that Ppr-s increases with time during a reset period and is applied to the scanning electrode.);

applying, to the second electrodes, a second-waveform voltage in which the applied voltage decreases as time lapses (Figure 12 shows that Ppe is applied to the scanning electrode which decreases with time.);

applying a scan pulse to the second electrodes and an address pulse to the third electrodes (Figure 12 shows that scanning pulses Pw are applied to the scanning electrodes while Pdata is applied to the data, i.e. third, electrodes.);

applying, to the second electrodes, a third-waveform voltage in which the applied voltage decreases as time lapses (Figure 12 shows that a decreasing waveform is applied to the scanning electrode.); and

applying a sustain pulse to at least ones of the first and second electrodes so that a voltage different, between the first and second electrodes alternately becomes a predetermined value in the sustain period (Figure 12 shows Psus-s and Psus-c applied to the scanning and sustaining electrodes.).

Correa et al., Sano et al. and Ishizuka fail to teach of applying a positive pulse to the third electrodes between the address period and the sustain period.

Yoon et al. disclose a method for driving a plasma display comprising applying a positive pulse to the third electrodes between the address period and the sustain period (Figure 18).

Therefore, it would have been obvious to “one of ordinary skill” in the art at the time the invention was made to provide for the positive voltage taught by Yoon et al. to be done during the declined waveform period as taught by the combination of Correa et al., Sano et al. and Ishizuka in order to further suppress an accumulation of a wall charge in unselected cells.

Regarding claim 26, this claim is rejected under the same rationale as claim 25.

Conclusion

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to STEPHEN G. SHERMAN whose telephone number is (571)272-2941. The examiner can normally be reached on M-F, 8:00 a.m. - 4:30 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amr Awad can be reached on (571) 272-7764. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Stephen G Sherman/
Examiner, Art Unit 2629

/Amr Awad/
Supervisory Patent Examiner, Art Unit 2629

2 June 2008